

CLAIMS

1. A system for use with a broadband network, the system comprising:
information means for obtaining information relating to network performance;

5 and

parameter means, coupled to the information means, for parameterizing the
network performance information, with parameters providing information about network
performance over time.

10 2. The system of claim 1 wherein the parameters provide information about
network performance in levels of network performance degradation.

3. The system of claim 2 wherein the parameter means is configured to
manipulate the network performance information into metrics related to network
15 performance, and to determine the level of network performance degradation associated
with each metric by comparing the metrics to thresholds associated with the levels of
network performance degradation.

4. The system of claim 3 wherein the information means obtains
20 substantially real-time raw network data and the parameter means manipulates the raw
data and compares the manipulated raw data with thresholds that are dependent upon at
least one of network performance, network configuration, computer models related to the

network, and empirical evidence related to the network.

5. The system of claim 4 wherein the information means is configured to manipulate the raw data by normalizing the raw data.

5

6. The system of claim 4 wherein the parameter means is distributed within the network.

7. The system of claim 2 wherein each parameter is indicative of a length of time that the corresponding metric has been at a designated level of network degradation.

10

8. The system of claim 7 wherein each parameter indicates an amount of hours that the corresponding metric has been at the designated level of network performance degradation within a selected amount of time.

15

9. The system of claim 8 wherein the network is a DOCSIS network including cable modems and cable modem termination systems, and the parameters indicate numbers of cable-modem hours at the designated levels of network degradation.

10. The system of claim 2 wherein the levels include degraded and severely degraded.

20

11. The system of claim 1 further comprising a combiner coupled to the parameter means and configured to combine the parameters according to a topology of the network, and according to which portions of the topology are selected for evaluation.

5 12. The system of claim 1 further comprising a combiner coupled to the parameter means and configured to combine the parameters according to a time period selected for evaluation.

10 13. The system of claim 1 further comprising presentation means coupled to the parameter means and configured to present information of the parameters over time.

14. The system of claim 1 wherein the parameter means is configured to parameterize the network performance information based upon at least one of a topology of at least a portion of the network, and a time period for evaluation.

15 15. A computer program product comprising computer-executable instructions for causing a computer to:

accumulate data relating to performance of broadband network elements; and
reduce the accumulated data relating to performance of multiple broadband

20 network elements to a single value characterizing an aggregate amount of time that the network elements were at a corresponding quality of network performance during a designated time frame.

16. The computer program product of claim 15 further comprising instructions for causing the computer to reduce the accumulated data relating to performance of multiple broadband network elements to another single value characterizing another aggregate amount of time that the network elements were at another corresponding quality of network performance during the designated time frame.

17. The computer program product of claim 15 wherein the single value characterizes the aggregate amount of time that the network elements were at the corresponding quality of network performance for a corresponding network issue during the designated time frame, the computer program product further comprising instructions for causing the computer to combine single values, for a common network issue, associated with multiple sets of network elements according to network topology into a single higher-level value of network performance.

18. The computer program product of claim 17 further comprising instructions for causing the computer to combine a plurality of the single higher-level values according to network topology and network issue to determine a single highest value indicative of a total amount of aggregate time of network elements at the corresponding level of network performance associated with the corresponding network issue.

19. The computer program product of claim 17 further comprising instructions

for causing the computer to combine a plurality of highest values corresponding to network issues into a single summary value indicative of a total amount of aggregate time of all network elements at the corresponding level of network performance, in at least a desired portion of network.

5

20. The computer program product of claim 15 wherein the instructions for causing the computer to reduce the accumulated data weights different accumulated data differently to determine the single value.

10

21. The computer program product of claim 15 wherein the instructions for causing the computer to accumulate data causes the computer to gather raw data from an associated broadband network.

15

22. The computer program product of claim 21 wherein the instructions for causing the computer to accumulate data causes the computer to analyze MIB objects provided by DOCSIS network elements.